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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BLAU, STEPHEN LUTHER

ART UNIT PAPER NUMBER

3711

DATE MAILED: 12/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/736,975

Applicant(s)

YAMADA, MEGUMI

Examiner

Stephen L. Blau

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The change to claim 8 is agreed with and the rejection under 35 U.S.C. 112, second paragraph, is removed.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

- (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
- (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claim 14 is rejected under 35 U.S.C. 102(e) as being anticipated by Preece.

Preece discloses a layer of metal containing prepreg wrapped at tip of a shaft (Col. 3, Lns. 39-47, Ref. No. 10), a layer of non-metal fiber prepreg wrapped adjacent to a layer of metal-containing prepreg throughout a length of a shaft (Ref. No. 11, Col. 3, Lns. 29-38), a layer of metal-containing prepreg being an inner most layer (Claim 1), a layer of non-metal fiber prepreg being wrapped over the inner most layer (Figs. 1A-1B), a metal having a specific mass greater than 7 g/cm³ in the form of copper (Col. 3, Lns.

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39-45), a metal power (Col. 3, Lns. 39-47) dispersed (Col. 4, Lns. 60-67) in a synthetic resin, and an epoxy resin (Col. 4, Lns. 33-40), and an inner-most layer of metal-containing prepreg is located along a length of a shaft between at tip end of the shaft and 40 % of an overall length of a shaft in the form of about 25-30 % of the defined length of the shaft (Fig. 1A).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2, 6-9, 11-13, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable under Preece in view of Kusumoto (6,306,047).

Preece discloses multiple layers used in forming a shaft (Ref. Nos. 18, 20, and 22) and conventional means of weighting pre-preg uses tungsten powder (Col. 1, Lns. 49-60). An artisan skilled in the art of forming shafts with sufficient weighting and strength would have selected a suitable number of metal-containing prepreg layers in which a second layer is included.

Preece lacks a non-metal fiber prepreg forming a generally non-inflected inner surface throughout the length of the shaft, a metal-containing prepreg and the non-metal fiber prepreg together form an inflected inner surface, an infected inner surface

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has a through hole being smaller in a portion defined by a metal-containing prepreg than in a portion defined by a non-metal fiber and a second layer of metal-containing prepreg and a Tungsten powder. Kusumoto discloses a mandrel having a tip surface being recessed relative to a body surface of the main body of the mandrel (Fig. 1) and a shaft having a generally constant taper throughout the length of a shaft. Kusumoto does not specifically state a layer overlaying a innermost tip reinforcing layer would have a generally non-inflected inner surface throughout the length of the shaft however clearly an artisan skilled in the art of shaping a mandrel to effect the shape of the outer layers with a inner layer which is only along a portion of a shaft would have shaped a mandrel at a portion where an inner layer is located to shape an outer layer in which an adjacent outer layer has a generally non-inflected inner surface throughout the length of the shaft is included. In view of the patent of Kusumoto it would have been obvious to modify the shaft of Preece to have mandrel with a recess at tip end and a non-metal fiber prepreg forming a generally non-inflected inner surface throughout the length of the shaft in order to form an outer surface of a shaft that has a generally constant taper throughout the length of a shaft. As such a metal-containing prepreg and the non-metal fiber prepreg together form an inflected inner surface and an infected inner surface has a through hole being smaller in a portion defined by a metal-containing prepreg than in a portion defined by a non-metal fiber

It would have been obvious to modify the shaft of Preece to have a second layer of metal-containing prepreg in order to have additional strength and weight at a tip end of a shaft. It would have been obvious to modify the shaft of Preece to have a metal

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powder being tungsten to add more weight to a tip end of the shaft for the same volume of material added.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Preece in view of Kusumoto (6,306,047) as applied to claims 1-2, 6-9, 11-13, and 17-18 above, and further in view of Takemura.

Preece lacks a shaft having a mass of about 80-130 grams. Takemura discloses a composite shaft having a weight of 80-85 grams (Col. 9, Lns. 10-17). In view of the patent of Takemura it would have been obvious to modify the shaft of Preece to have a shaft weight of 80-85 grams in order to have a swing weight for a specific player's strength which will minimize fatigue while playing a round of golf yet maximize the amount of energy transferred to a ball at impact.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Preece in view of Kusumoto (6,306,047) as applied to claims 1-2, 6-9, 11-13, and 17-18 above, and further in view of Lezatte.

Preece lacks a center of mass located 45-51 % when measured from a tip end. Lezatte discloses a center of mass located 45-51% when measured from a tip end (Col. 3, Lns. 30-38). In view of the patent of Lezatte it would have been obvious to modify the shaft of Preece to have a center of mass located 45-51% when measure from a tip end in order to have a shaft with a specific swing weight which fits the strength of a golfer.

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8. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Preece in view of Beach.

Preece lacks an EI value of about 3 to 4.5 kgfm² at 200 mm from a tip. Beach discloses an EI value at a tip portion of 4.59 kgfm² (Claim 3). Clearly an artisan skilled in the art of selecting a suitable flexibility and inertia for a specific swing of a golfer to maximize flying distance would have selected a suitable EI value in which 4.5 kgfm² at 200 mm from a tip is included. In view of the patent of Beach it would have been obvious to modify the shaft of Preece to have an EI value of about 4.5 kgfm² at 200 mm from a tip end in order to utilize the flexibility of a tip end of a shaft to maximize the velocity of a tip end of a shaft at impact for a specific strength golfer.

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Preece in view of Kusumoto (6,306,047) as applied to claims 1-2, 6-9, 11-13, and 17-18 above, and further in view of Hsu.

Preece lacks the layer of metal-containing prepreg being a metal fiber. Hsu discloses using metal filaments to weight a tip end of a shaft (Col. 1, Lns. 56-66). In view of the patent of Hsu it would have been obvious to modify the shaft of Preece to have fibers instead of powders to add not only weight but also strength to a tip end of a shaft.

Response to Arguments

10. The argument that the metal containing film (10) of Preece is not prepreg or does not contain epoxy is disagreed with. The film has resin that is partially cured to form a malleable sheet (Col. 3, Lns. 39-47). This is a prepreg. In addition, epoxy is discussed as a possible resin which relates to all the plies (Col. 4, Lns. 20-40). The arguments that it is improper to use the reference of Beach because Beach does not refer to EI but flexional rigidity, Beach does not disclose the EI value at a point 200 mm from a tip, and Beach discloses an EI value outside of the claimed range and is a low extreme range value compared to a high limit range value are disagreed with. Beach defines flexional rigidity as an EI calculation (Col. 6, Lns. 9-15). In addition, clearly every shaft has EI values and there are all types of players with different strengths as well as swing speeds which required different stiffnesses and strengths for a shaft. The claimed value for EI at 200 mm from a tip end is a suitable value for a weaker golfer who swings a club at a slower speed. The other arguments are moot in view of the new rejections.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within


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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Blau whose telephone number is (703) 308-2712. The examiner is available Monday through Friday from 8 a.m. to 4:30 p.m.. If the examiner is unavailable you can contact his supervisor Paul Sewell whose telephone number is (703) 308-2126. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0858.

Slb 29 November 2002


STEPHEN BLAU
PRIMARY EXAMINER